Consensus Statements:
Ad Hoc Expert Committee on
Lead Contamination in the
Madison County/Granite City Area

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Paul Mushak, Ph.D.
PB Associates
Durham NC 27705

Robert Bornschein, Ph.D.
University of Cincinnati
Cincinnati OH 45267

John F. Rosen, M.D.
Albert Einstein College of Medicine
Bronx NY 10467

Ellen J. O'Flaherty, Ph.D.
University of Cincinnati
Cincinnati OH 45267

Allan H. Marcus, Ph.D.
US Environmental Protection Agency
Research Triangle Park NC 27711

Renate Kimbrough, M.D.
Institute for Evaluating
Health Risks
Washington DC 20005

A. GENERAL ISSUES

1. Lead is a contaminant with no known thresholds for toxic effects.

2. There are multiple risk groups - children, infants, fetus, adults. The most sensitive subgroups for neurobehavioral and developmental deficits are children and fetuses.

3. There are multiple sources (air, tap water, paint, soil, food, etc.) and pathways (direct and indirect) by which lead impacts the public.

- The most important component of health risk related to lead is exposure. Health risks exist only when a person comes into contact with and takes in some medium containing lead.

- Environmental sources and pathways are modified by host factors such as nutrition, behavior, social and economic factors. These host factors can be labile, changing over time.

4. Pathways may be site specific. Interior dust is a very important exposure medium. The contribution and relative importance of sources, such as lead in soil and lead in paint, which contribute to lead in household dust, may vary from site to site and within sites.

5. Lead in soil can have a quantifiable impact on blood lead.

- Public health risk is defined by CDC's guideline of blood lead concentration greater than or equal to 10 ug/dl. EPA has identified 10 ug/dl as the lower end of the range of blood lead concentrations at which there is a quantitatively increased risk of neurobehavioral deficits in young children, but with no detectable threshold at lower concentrations. Using blood lead as an indicator of potential health effects, EPA's Office of Solid Waste and Emergency Response has defined a guideline of no more than 5% of children exceeding 10 ug/dl as an appropriate basis for remediation goals for lead in soil at CERCLA sites.

6. It is possible to design studies to quantitatively estimate the relative contribution of sources and different pathways of lead to blood in children. These studies require environmental data sufficient to identify and quantify lead in various media, with lead in soil, interior and exterior dust, paint, and tap water as the media most important for young children. In addition to environmental data, studies may include, but are not limited to: collection of biological data such as blood lead or bone lead; statistical analyses of historical data; estimates of exposure and blood lead based on mathematical models.

7. There is a range of concentrations of lead in soil within which soil lead can produce an increased public health risk.

8. Depending upon site characteristics and the ability to prevent recontamination of the site, soil lead remediation has been demonstrated to reduce blood lead levels in children.

B. LEAD CONTAMINATION AROUND THE GRANITE CITY SITE, AND IN THE SURROUNDING COMMUNITY WHICH EXTENDS BEYOND THE CONFINES OF THE SUPERFUND SITE.

1. It is agreed that historic contamination occurred from:

- The site-based operable unit

    1. atmospheric emissions from the plant (stack and pile);
    2. fugitive dust emissions;
    3. bulk transport offsite of residue;
    4. "worker" transport of dust;
    5. surface runoff;
    6. groundwater contamination;
    7. battery casings used on alleys and driveways.

- Other non-site derived sources that impact the proximate community;

1. past automotive emissions;
2. lead paint;
3. surrounding industries;
4. lead used in water supply lines.

Strength of evidence as to the quantity and duration of the impact of these sources is variable.

2. The following studies on Granite City and Madison County were not reviewed in detail due to a lack of time:

1983 Illinois EPA
1988 O'Brien and Gere BRA
1994 IDPH draft report
1994-1995 various analyses of IDPH draft report

3. Based on the available scientific data, the Committee concludes that the current waste pile has been and will continue to be a significant potential lead source in the community; this source is potentially mobile and therefore requires vigorous intervention to prevent continuing community contamination. Current on-going air monitoring suggests that there is relatively little community contamination from airborne particles from the pile during this interim period. There are concerns about lead leached from the pile contributing to surface water runoff and contamination of land near the pile. There are also concerns about the ability of the current air monitoring to adequately characterize offsite migration of lead.

4. The Committee recognized that the removal of the waste pile could pose its own risk of Pb contamination in the community since the pile contains dust and unconsolidated debris such as battery casing chips from which lead may be leached out and resuspended.

5. In addition to the portion of the site containing the waste pile, the remainder of the unremediated site which sits on contaminated soils may contribute to offsite transport of lead, and should therefore be remediated.

6. The Committee agreed that properties immediately adjacent to the Taracorp property should be subject to intervention, e.g. soil removal, conversion to a buffer zone, if appropriate, concurrently with actions which address the site. Many of these properties had soil lead levels in the 2000-5000 ppm Pb range as reported in the Illinois EPA Report of April 1983. Since then, a number have been remediated by soil removal and replacement. The properties that are most appropriate for a buffer zone are those unused areas or marginally used commercial and industrial areas adjacent to the waste pile.

7. During remediation efforts, serial blood lead monitoring should be done on impacted children, with appropriate case management. Because of the potential for lead exposure of workers at commercial and industrial facilities nearest to the waste pile, it may be advisable to conduct serial blood lead monitoring for all adults working at these facilities, as well as their families, who may not be protected by occupational or community health regulations.

8. The Committee agrees that the dispersal of battery casing material used as fill in various communities is an additional source of lead exposure and recommends that the extent of of this particular problem be investigated in a systematic manner.

9. The Committee recognizes that there are instances of elevated blood lead levels dispersed throughout the community. These cases need to be evaluated in a systematic fashion which could be accomplished by a designated health professional.

10. An ongoing effective registry of elevated blood lead levels and contamination sites/residences should be implemented.

11. The local community should be encouraged to work with local health providers to implement an ongoing lead exposure reduction program, with outside support if necessary.

C. RESIDENTIAL LEAD ISSUES AT GRANITE CITY

1. Lead is a toxicant to which children [in Granite City] are exposed through multiple pathways from multiple sources.

2. Soil lead remediation will be required in Granite City and elsewhere in Madison County. Paint lead remediation will also be required in some cases.

3. Continuation of residential soil remediation will have long-term benefits (years) for the community, including future residents, and may have short-term benefits (months) for the current residents.

4. Because interior and exterior dust lead are important pathways of lead exposure, implementation of a program to address all sources of lead in household dust, including both soil and paint lead, is indicated. If possible, remediation strategies should be devised based on consideration of all significant environmental lead sources at that site. This program should be undertaken without any reduction in the rate of current or planned residential soil remediation activities.

5. It should be noted that there are efforts at other CERCLA sites to address multimedia sources. The Madison County communities will need to develop their own site-specific program.